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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/768,271

01/29/2004

Chuan-De Huang

5946

25859

7590

01/10/2006

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EXAMINER

REHM, ADAM C

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/768,271	HUANG, CHUAN-DE	
	Examiner	Art Unit	
	Adam C. Rehm	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 and 19-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 19-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

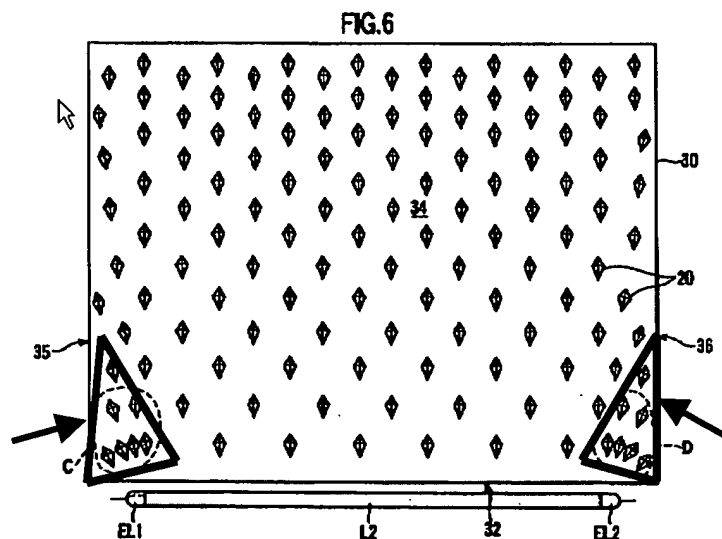
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5-7, 10, 11 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by OHKAWA (US 6,671,013). OHKAWA provides:

- A plurality of point/LED light sources for emitting light beams that define brighter areas and darker areas adjacent to the light source (L6, L7 in Fig. 9);
- A rectangular light guide plate (50 in Fig. 8);
- A light incidence surface (32 in Fig. 6);
- An emission surface adjacent to the light incidence surface (13 in Fig. 2b);
- A bottom surface opposite to the emission surface (14 in Fig. 2b);
- A scatter enhancing/darker region that is adjacent to the light incidence surface (C, D, 32 in Fig. 6);
- A plurality of uniformly arranged diffusion dots (20) formed in a substantially triangular configuration (C, D in Fig. 6 below illustrates both: (1) independent triangular dots; and (2) clustered dots formed in a triangular arrangement, Column 8, Lines 23-25);
- A configuration of dots wherein dots in the scatter enhancing/darker regions are larger than the diffusion dots in a remaining region of the bottom surface

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- adjacent to the scatter enhancing regions (Column 6, Lines 11-14 discloses arranging larger dots, i.e. "density-covering rate gets gradually larger", further away from a light source in order to provide uniform brightness over an emission face; Fig. 4 is a graph illustrating the density-covering rate via percentage with dots further away having a percentage greater than 8%); and
- Cluster densities in enhancing regions between 50-90 percent and cluster densities in remaining regions from 3-85 percent (Fig. 6 illustrates dots 20 in regions C and D clustered over 50% of surface 34 and over 3% of other regions).



### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over OHKAWA (US 6,671,013) as applied to claim 1 above including dots (20) and a light source (L6, L7) with larger dots in dark areas (Column 6, Lines 11-14), and further in view of ISHIKAWA (US 5,921,651). OHKAWA '013 provides the elements as recited above, but does not provide dots of varying dot size depending on proximity to the light source. However, ISHIKAWA teaches varying size dots on a light guide with dots of increasing size on edges and with increasing distance from a light source (Fig. 14) for the purpose of compensating for luminance drop (Column 8, Lines 11-18). It would have been obvious to one of ordinary skill in the art at the time of invention to modify OHKAWA and use the dots of increased dot size as taught by ISHIKAWA in order to compensate for luminance drop, thus providing a light guide having a uniform brightness.

5. Claims 8, 9, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over OHKAWA (US 6,671,013) as applied to claim 1 above, and further in view of OHKAWA (US 6,755,546). OHKAWA '013 provides the elements as recited above, but does not provide a wedge-shaped light guide made of PMMA or reflective or diffusing plates. However, OHKAWA '546 provides:

- A wedge shaped light guide (15, Column 8, Lines 47-48);
- A light guide made of PMMA (Column 4, Lines 22-25);
- A reflective sheet (17) to reflect and return leaking light to avoid loss of illumination (Column 4, Lines 5-8); and

- A diffusion sheet (18) to scatter light and provide uniform light emission (Column 4, Lines 8-15).

6. It would have been obvious to one of ordinary skill in the art at the time of invention to modify OHKAWA '013 and use the above-cited elements as taught by OHKAWA '546 in order to obtain the well-known advantages. Specifically, it is well known to use: (1) a wedge-shaped light guide for efficient use of light; (2) PMMA for its remarkable property of excellent transparency; (3) a reflective sheet for heightened efficient use of light; (4) and a diffusion sheet for uniform light distribution.

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over OHKAWA (US 6,671,013). OHKAWA provides the elements as recited above, but does not provide a prism sheet. However, OHKAWA discloses a light guide plate (50) that cancels any "particular need" for a prism sheet (Column 3, Lines 4-11). As such, it is reasonable to deduce that the advantages provided by the use of a prism plate are well known in the art and that it would have been obvious to one of ordinary skill in the art at the time of invention to utilize the prism sheet in order to obtain the known advantages thereof, i.e. to modify the direction of light.

8. Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over OHKAWA (US 6,671,013) in view of ISHIKAWA (US 5,921,651). OHKAWA '013 provides:

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- A plurality of point/LED light sources for emitting light beams that define brighter areas and darker areas adjacent to the light source (L6, L7 in Fig. 9);
- A rectangular light guide plate (50 in Fig. 8);
- A light incidence surface (32 in Fig. 6);
- An emission surface adjacent to the light incidence surface (13 in Fig. 2b);
- A bottom surface opposite to the emission surface (14 in Fig. 2b);
- A scatter enhancing/darker region that is adjacent to the light incidence surface (C, D, 32 in Fig. 6);
- A plurality of uniformly arranged diffusion dots (20) formed in a substantially triangular configuration (C, D in Fig. 6 below illustrates both: (1) independent triangular dots; and (2) clustered dots formed in a triangular arrangement, Column 8, Lines 23-25);
- A configuration of dots wherein dots in the scatter enhancing/darker regions are larger than the diffusion dots in a remaining region of the bottom surface adjacent to the scatter enhancing regions/distribution density is approximately 50% (Column 6, Lines 11-14 discloses arranging larger dots, i.e. "density-covering rate gets gradually larger", further away from a light source in order to provide uniform brightness over an emission face; Fig. 4 is a graph illustrating the density-covering rate via percentage with dots further away having a percentage greater than 8%); and

- Cluster densities in enhancing regions between 50-90 percent and densities in remaining regions from 3-85 percent (Fig. 6 illustrates dots 20 in regions C and D clustered over 50% of surface 34 and over 3% of other regions).

9. OHKAWA does not provide dots of varying dot size depending on proximity to the light source. However, ISHIKAWA teaches varying size dots on a light guide with dots of increasing size on edges and with increasing distance from a light source (Fig. 14) for the purpose of compensating for luminance drop (Column 8, Lines 11-18). It would have been obvious to one of ordinary skill in the art at the time of invention to modify OHKAWA and use the dots of increased dot size as taught by ISHIKAWA in order to compensate for luminance drop, thus providing a light guide having a uniform brightness.

### ***Response to Arguments***

10. Applicant's arguments with respect to the claims have been considered but are substantially moot in view of the new ground(s) of rejection. It is the Examiner's position that providing dots of varying size and density in order to manipulate light for providing uniform luminescence is notoriously well known in the art. Additional references are cited below.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.



11. TAMURA ET AL. (US 2002/0197051) discloses a light guide having dots of increasing diameter with increasing distance from a light source and larger concentrations of dots at light ends.
12. BOURDELAIS (US 6,846,098) discloses a light guide having dots of increasing diameter with increasing distance from a light source.
13. AKAHANE ET AL. (US 5,931,555) discloses a light guide having dots of increasing diameter with increasing distance from a light source.
14. YOKOYAMA ET AL. (US 5,584,556) discloses a light guide having dots of increasing diameter with increasing distance from a light source.
15. MATSUMOTO (US 5,649,754) discloses a light guide having dots of increasing diameter with increasing distance from a light source.
16. ISHIKAWA ET AL. (US 5,575,549) discloses a light guide having dots of increasing diameter with increasing distance from a light source.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam C. Rehm whose telephone number is 571.272.8589. The examiner can normally be reached on M-F 9-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571.272.2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

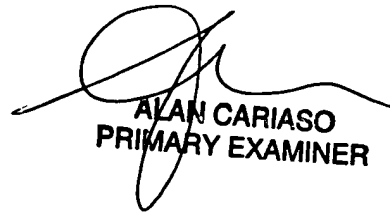
For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

ACR

12/30/2005



ALAN CARIASO  
PRIMARY EXAMINER